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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 3 PROGRAM ELEMENT: 0603758N
 PROGRAM ELEMENT TITLE: Naval Warfighting Experiments and Demonstrations
(U) COST: (Dollars in Thousands)

PROJECT			
NUMBER &	FY 2000	FY 2001	FY 2002
TITLE	ACTUAL	ESTIMATE	ESTIMATE
R2918 Naval Warfighting Experiments and Demonstration			
	**	**	43,277

** The Science and Technology Program Elements (PEs) were restructured in FY 2002. The work described in FY 2000 & 2001 was funded in PE(s) 0603792N and 0603238N.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of this program is to mature select technologies to facilitate advanced operational experimentation. The coevolution of concepts and technologies requires that potentially revolutionary developments be investigated in Naval service operational experimentation: Fleet Battle Experiments (FBE), Advanced Warfighting Experiments (AWE) and Limited Objective Experiments (LOEs). Concept driven operational experimentation is constrained because the technology employed is either from currently deployed/available systems, or those about to complete the acquisition process. This program in collaboration with the concept development activities for the Navy and Marine Corps, identifies high leverage and potentially revolutionary technology/concept pairings and focuses developmental efforts on preparation of Operational Experiment Articles (OEA). The OEAs (fieldable technology prototypes) tailored for operational experimentation will provide the ability to operate/experiment with technologies and concepts that would otherwise be too advanced or high risk to be employed in the operational environment. Initial efforts will mature technologies in unmanned vehicles, High Speed Vessels, "Expeditionary Grid" elements, small low cost sensors, rapid target geo-location, combat Identification, advanced countermeasures and knowledge management systems, tailored for littoral environments and expeditionary operations. These technologies are key enablers for evolving Network Centric access concepts for Naval first on scene operations in conflict and operations-other-than-war. Through maturation of key enabling technologies, the program will provide surrogate capabilities, which would be otherwise unavailable, and allow leading edge operational experimentation. The iterative technology/concept collaboration will enable innovation and dramatically shorten the time to understand and capitalize on the ramifications of new technologies.

(U) This program also completes the following Advanced Technology Demonstrations (ATD): Reactive Material Advanced Warhead, Multi-Element Buoyant Cable Antenna, Multi-Platform Broadband Processing, and Forward Air Support Marine (FASM). ATD programs are selected for a match between technological potential and Navy requirements, which are derived from operational issues of concern to the fleet. Risk-reducing ATDs cover integrating and assessing technology in a realistic operational environment and are focused on laying the technical foundations for acquiring improvements to future joint warfighting capabilities. Each demonstration is designed to assess the extent to which the technology is feasible, affordable, and compatible with operational concepts and projected force structure.

(U) Due to the number of efforts in the PE, the program described are representative of the work included in the PE.

R-1 Line Item 39

Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

UNCLASSIFIED

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DATE: May 2001

BUDGET ACTIVITY: 3

PROGRAM ELEMENT: 0603758N

PROGRAM ELEMENT TITLE: Naval Warfighting Experiments and Demonstrations

PROJECT NUMBER: R2918:

PROJECT TITLE: Naval Warfighting Experiments and Demonstration

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is budgeted within the ADVANCED TECHNOLOGY DEVELOPMENT Budget Activity because it encompasses design, development, simulation, and experimental testing or prototype hardware. It is also necessary to validate technological feasibility and concept of operations to reduce technological risk prior to initiation of a new acquisition program or transition to an ongoing acquisition program.

(U) PROGRAMS PLANS AND ACCOMPLISHMENTS:

	FY00	FY01	FY02 \$43,277
Initiate	<ul style="list-style-type: none"> • REACTIVE MATERIAL ADVANCED WARHEAD Advanced Technology Demonstration (ATD) - Objective is to utilize energetic fragments to enhance warhead effectiveness against missiles, aircraft and radar sites. • MULTI-ELEMENT BUOYANT CABLE ANTENNA (MBCA) ATD - Objective is to develop and demonstrate an advanced Buoyant Cable Antenna (BCA) System to provide a submerged submarine with two-way, high-data rate Ultra High Frequency (UHF) fleet satellite communications, line-of-site (LOS) L-band, K-band communications as well as accessory sensor functions such as Global Positioning System, Video, and Radar Warning. • MULTI-PLATFORM BROADBAND PROCESSING ATD - Objective is to develop and demonstrate 		<ul style="list-style-type: none"> • Selection and maturation of technology for Operational Experiment Articles in the areas of: Unmanned Vehicles, High Speed Vessels, "Expeditionary Grid", Small Low Cost Sensors, Rapid Target Geo-location, Combat Identification Advanced Countermeasures Knowledge Management These technologies are key enablers for operational experimentation to explore emergent Network Centric concepts.

R-1 Line Item 39

Budget Item Justification
(Exhibit R-2, page 2 of 6)

UNCLASSIFIED

UNCLASSIFIED

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	<p>common, broadband acoustic signal processing algorithms for submarine, surface ship, and weapons sonar systems.</p> <ul style="list-style-type: none"> • FORWARD AIR SUPPORT MARINE (FASM) Maritime Defense Demonstration (MDD) - Objective is to demonstrate a gun launched observation vehicle with a 3 hour/240 nmi flight endurance and capabilities for surveillance, battle damage assessment, targeting and ordnance dispensing. 		
Continue		<ul style="list-style-type: none"> • REACTIVE MATERIAL ADVANCED WARHEAD ATD - Complete reactive fragment design and develop warhead design concept. • MBCA ATD - Complete demonstration system design and initiate antenna fabrication. • MULTI-PLATFORM BROADBAND PROCESSING ATD - Collect bistatic data for coordinated attack development. Conduct closed loop demonstration of simultaneous signal processing for torpedoes. Collect Low Band Variable Depth Sonar (LBVDS) sonar system in-water data. FASM MDD - Conduct first vehicle flight tests and 	

R-1 Line Item 39

Budget Item Justification
(Exhibit R-2, page 3 of 6)

UNCLASSIFIED

UNCLASSIFIED

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		harden components for subsequent gun launch testing.	
Complete			<ul style="list-style-type: none">• REACTIVE MATERIAL ADVANCED WARHEAD ATD - Conduct arena test demonstration of Reactive Warhead against representative target sets.• MBCA ATD - Conduct simulated submarine (surface ship) and actual submarine demonstration of antenna communication capabilities.• MULTI-PLATFORM BROADBAND PROCESSING ATD - Complete series of coordinated submarine and torpedo attack demonstrations utilizing common broadband acoustic signal processing. Demonstrate fully coherent broadband processing for all platforms (ships, torpedoes and submarines).• FASM MDD - Conduct gun launch and flight demonstration.

R-1 Line Item 39

Budget Item Justification
(Exhibit R-2, page 4 of 6)

UNCLASSIFIED

UNCLASSIFIED

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(U) PROGRAM CHANGE SUMMARY:

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget			0
Appropriated Value:			
Adjustments from FY 2001 President's Budget:			
PE Restructure			43,247
NWCF Rate Adjustments			-20
Non-Pay Inflation			+62
NMCI Reduction	0	0	-12
FY 2002 Budget Submission	**	**	43,277

** The Science and Technology Program Elements (PEs) were restructured in FY 2002. The work described in FY 2000 & 2001 was funded in PE(s) 0603792N and 0603238N.

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding: Not Applicable.

(U) Schedule: Not Applicable.

(U) OTHER PROGRAM FUNDING SUMMARY: The Navy's 6.1 program contributes to this effort.

(U) NAVY RELATED RDT&E:

- (U) 0601152N In-house Lab Independent Research
- (U) 0601153N Defense Research Sciences
- (U) 0602114N Power Projection Applied Research
- (U) 0602123N Force Protection Applied Research
- (U) 0602131M MC Landing Forces Tech
- (U) 0602235N Common Picture Applied Research
- (U) 0602236N Warfighter Sustainment Applied Research
- (U) 0602271N RF Systems Applied Research
- (U) 0602435N Ocean Warfighting Environment Applied Research
- (U) 0602747N Undersea Warfare Applied Research
- (U) 0602782N Mine & Expeditionary Warfare Applied Research
- (U) 0603114N Power Projection Advanced Technology

R-1 Line Item 39

Budget Item Justification
(Exhibit R-2, page 5 of 6)

UNCLASSIFIED

UNCLASSIFIED

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- (U) 0603123N Force Protection Advanced Technology
- (U) 0603235N Common Picture Advanced Technology
- (U) 0603236N Warfighter Sustainment Advanced Technology
- (U) 0603271N RF Systems Advanced Technology
- (U) 0603640M Marine Corps Advanced Technology
- (U) 0603729N Warfighter Protection Advanced Technology
- (U) 0603747N Undersea Warfare Advanced Technology
- (U) 0603757N Joint Warfare Program
- (U) 0603782N Mine & Expeditionary Warfare Advanced Technology

(U) NON NAVY RELATED RDT& E.

- (U) 0603727D Joint Warfighting
- (U) 0603750D Advanced Concept Technology Demonstration

(U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 39

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(Exhibit R-2, page 6 of 6)

UNCLASSIFIED